The Universal Service Administrative Company

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STATUS REPORT:

ELIGIBLE PRODUCTS DATABASE PILOT PROGRAM

A report by the

Universal Service Administrative Company

to the

Federal Communications Commission

Docket 02-6



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Executive Summary and Strategic Direction

The Universal Service Administrative Company (USAC) is responsible for administering the FCC's Schools and Libraries Support Mechanism, popularly known as "E-rate." In doing so, a variety of computer tools are utilized that assist the following two public service objectives:

- Prompt and correct decisions with respect to E-rate funding requests and associated processes, and
- Effective oversight against waste, fraud, and abuse.

This report describes an innovation that has the potential to enhance USAC's ability to achieve these public service objectives. This tool, known as the Eligible Products Database, was initiated in response to FCC direction in the Second Report and Order and Further Notice of Proposed Rulemaking in Docket 02-6. (See paragraph 37 of FCC 03-101, released April 30, 2003). In that Order, the FCC concluded there could be merit in creating an online list of eligible products. The FCC directed USAC to implement a pilot program that would test the feasibility of the approach and to submit a report to the Commission about the effectiveness of the program. This is that report.

Initial results indicate that the Eligible Products Database is providing direct benefit to members of the public by providing somewhat greater certainty concerning the E-rate eligibility of listed products. However, applicants cannot unilaterally depend on the products listed in the database, as most are eligible based on a variety of conditions. Currently, over 3,500 products are listed. As the database continues to grow, benefits may be expected to increase further.

In addition, the Eligible Products Database appears to have the potential to foster overarching improvements to the application process. To appreciate this potential, one must be aware of the current method that applicants use in specifying the products and services for which funding is requested. This is accomplished by a supplement to FCC Form 471 that is known as the Item 21 Attachment.

The Item 21 Attachment indicates the specific products and services for which Erate support is requested. USAC review of the Item 21 Attachment is a principal means by which the eligibility of these products and services is determined. Sharp differences exist in the way that the Form 471 information and the Item 21 Attachment information are made available to USAC's E-rate reviewers.

Applicants submit FCC Form 471 principally through an online electronic filing system. In some cases the Form 471 is submitted manually. In that event USAC

contractor personnel re-key the information so that it is available in electronic form. Thus, all information in FCC Form 471 may be reviewed with the assistance of computer tools. In contrast, the Item 21 Attachment information is submitted manually, with no specific format. Since no format is specified, USAC does not save any of the information as computer data. Rather, over 100,000 Item 21 Attachments per year are saved as electronic images. Such an image format does not allow computer analysis to assist the review process. A visual "picture" of the submitted information can be viewed, but no computer-assisted comparison of the Item 21 Attachment and other information is possible. Thus, USAC analysis and comparison (e.g., during initial review of funding requests, for appeals, for any changes in the products and services to be implemented, and for invoice reviews) must be accomplished through a process that depends on finding and manually analyzing the contents of the Item 21 Attachment information.

However, by connecting the Item 21 Attachment submissions to a database of eligible products, two significant benefits arise. First, all parties can have greater clarity regarding the eligibility of funding requests, as indicated above. Second, with Item 21 Attachment information that consists of actual computer data rather than only an electronic image, additional tools can be developed to assist USAC's review of funding requests.

This potential may be understood by considering USAC's current method of invoice review. Before an invoice reviewer authorizes disbursement of funds, a manual comparison is made between the products and services listed on the Item 21 Attachment and the products and services indicated in the invoicing information. This requires finding and reviewing the Item 21 Attachment electronic image, determining if any changes have been made in the product and service specification (for example, through an applicant request that is consistent with FCC rules), and conducting a manual comparison of that information against the invoice information.

Under a revised approach, the specification of the products and services authorized in a funding request would be saved as computer data, and this data could be machine-compared against comparable invoicing data if it, too, were provided electronically. This machine-comparison has the long-term potential to lead to significant improvements in USAC invoice review. Manual review would not be eliminated, but could be more focused in areas where discrepancies existed.

Additional benefits could be obtained for other critical USAC processes—core application review, appeals, requests to change products and services previously approved, and other functions.

In undertaking the FCC-directed pilot program USAC_has completed Year 1 of the pilot, and, as detailed further in this report, is moving forward into a second year that will provide enhancements to the core functionality.

Most of this report is focused on current status and next steps. However, the above description of the longer term potential is important in understanding the worth of the project. This long term goal, by its comprehensive nature, must remain flexible to adapt to valuable input from USAC stakeholders and lessons learned at each stage. Thus, USAC is utilizing an incremental, step-by-step process that recognizes benefits so far and builds on these initial results over the next year. USAC will then evaluate the benefits of continuing to scale the database against its recurring production costs.

The body of this report is divided into nine additional sections. Sections one through five provide further background and a description of the current system. Section six indicates anticipated improvements over the next year. Section seven describes challenges and potential concerns to be considered. Sections eight and nine expand on the long term view and provide concluding remarks. Appendices to the report provide supplementary information.

STATUS REPORT:

ELIGIBLE PRODUCTS DATABASE PILOT PROGRAM

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STATUS REPORT:

ELIGIBLE PRODUCTS DATABASE PILOT PROGRAM

The Eligible Products Database (EPD) is a pilot program instituted by the Universal Service Administrative Company (USAC) at the direction of the Federal Communications Commission (FCC).

The database holds thousands of products that are eligible for funding under the Schools and Libraries Support Mechanism, popularly known as "E-rate." As USAC moves from an initial pilot implementation to a database system with additional features, it is providing this report of the progress to date and current plans.¹

The approach developed by USAC and described in this status report anticipates an incremental implementation process, the first year of which is complete. Initial results have been favorable, and plans are in place for continued development and refinement of the system.

1. Historical Background

The idea for an Eligible Products Database was described in a *Notice of Proposed Rulemaking and Order* in FCC Docket 02-6:

One possible alternative approach that has been suggested would be to establish a computerized list accessible online, whereby applicants could select the specific product or service as part of their FCC Form 471 application. Because applicants would only select from pre-approved products and services, this presumably would decrease the number of instances in which applicants seek funding for ineligible services. It has also been suggested that such a process would considerably simplify the application review process. Further, by helping to avoid accidental funding of ineligible services, it would further the Commission's goal of preventing fraud and abuse.²

¹ Access to the Eligible Products Database is provided on the USAC website, at http://www.sl.universalservice.org/vendor/epd_pilot/.

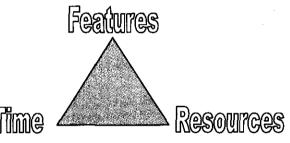
² Schools and Libraries Universal Service Support Mechanism, CC Docket 02-6, Notice of Proposed Rulemaking and Order, FCC 02-8, released January 25, 2002, paragraph 14, footnote omitted. Citation information in this document specifies FCC numbers, which can be used to obtain the full document text using the FCC's Electronic Document Management System (EDOCS) available at http://www.fcc.gov/searchtools.html.

After receiving comments and reply comments, the FCC determined that a pilot implementation of the concept should be pursued.

[W]e conclude that the development of such a list should proceed in stages. The Administrator should first test the use of such a list on a limited portion of the eligible services and products list. Therefore, we direct USAC, in conjunction with the Wireline Competition Bureau (Bureau), to develop and test as a pilot program an online list for internal connections equipment. (Second Report and Order and Further Notice of Proposed Rulemaking, FCC 03-101, released April 30, 2003, paragraph 35.)

The FCC directed that USAC "report to the Commission about the effectiveness of the program during and after successful implementation." (Paragraph 37.)

Based on initial planning, USAC was aware of the difficulty of creating a substantial new system for thousands of internal connections products in a limited time period. As a pilot program, a balance was achieved between time



requirements, resource requirements, and the initial features of the system. The following concepts were a key part of initial decisions that drove the details of the pilot implementation.

 Internal Connections equipment (only) has been included in the pilot database.

No services, but only Internal Connections products, make up the initial database. In addition, no cabling and connector products have been included, since the tens of thousands of products available in this category could swamp the feasibility of initial implementation.

Initial implementation has been for Fund Year 2005.

Access to the database by the public was required in the fall of 2004 so that funding requests could be prepared on a timely basis for Fund Year 2005. The initial public interface for the database was made available on September 28, 2004. An enhancement to this initial implementation—a prototype online Item 21 Attachment system—was introduced on December 21, 2004.³

· Active manufacturer participation was sought and obtained.

The prototype system relies on submissions by enrolled manufacturers for products that the manufacturers indicate are E-rate eligible. That is, the information in the Eligible Products Database is created and maintained by manufacturers, which is a key factor in overall feasibility. SLD review of these submissions determines whether this information will be posted to the Eligible Products Database, or returned to the manufacturer with a reason why a record was not posted.

 Automation for all aspects of the system has been incorporated in order to maintain feasibility.

> An efficient software-driven process has been used to the maximum degree possible. Manufacturer enrollment, manufacturer data submission, SLD review, and the database itself are all tightly designed around an integrated system.

In addition, USAC adhered to FCC direction provided in the Second Order. For example, the FCC provided that applicants should continue to have a choice in their selection of products, whether or not a particular product is included in the database.⁴

Further excerpts from this Order are provided in Appendix 1.

³ For reference, the Fund Year 2005 filing window was December 14, 2004 through February 18, 2005.

⁴ The FCC stipulated these terms for the pilot program:

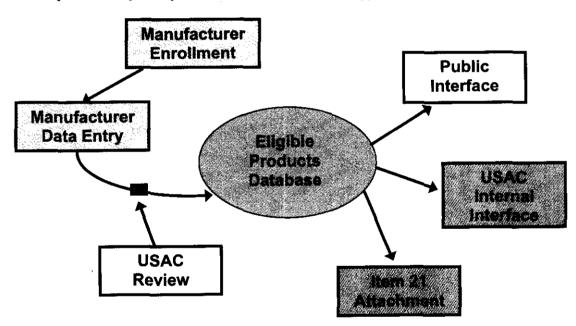
⁽¹⁾ the pilot system should continue to allow flexibility of choice of products by applicants; (2) this list should operate as a safe harbor, rather than a complete list of all eligible items; (3) all equipment and services listed will be automatically eligible for discounts provided the use is eligible and other funding requirements are satisfied; (4) there should be a procedure to have new products added to the list; (5) applicants and service providers may use the existing appeals procedures to appeal decisions by the Administrator rejecting the addition of specific items on the list; (6) applicants may also seek support for internal connections equipment that is not on this list; (7) such requests will be evaluated consistent with the Administrator's existing practice of ensuring that the equipment and proposed use are consistent with educational purposes. (Second Report and Order and Further Notice of Proposed Rulemaking, FCC 03-101, released April 30, 2003, paragraph 36.)

2. Features of the Eligible Products Database

The Eligible Products Database consists of several subsystems. The principal components are as follows:

A <u>manufacturer enrollment</u> system allows a national manufacturer of E-rate eligible internal connections products to submit product information to the database. All participating manufacturers are required to already have or to obtain a Service Provider Identification Number (SPIN) as part of the enrollment process.

Manufacturer data entry is assisted through a template approach that maintains a consistent format for product name, product type, description, and so forth. The data fields were chosen to be largely consistent with a system called PEPPM, already utilized by many manufacturers of technology products.⁵



<u>USAC review</u> of submitted products evaluates the information submitted, but due to resource limitations does not necessarily undertake additional research

⁵ PEPPM is a bidding and purchasing program for technology products, originally developed for the state of Pennsylvania but now also used by other states. Under PEPPM, vendors submit bids that, if and when accepted, are posted on the PEPPM web site. The PEPPM database includes E-rate eligible products, as well as products that are not eligible for funding, and is available for use by schools, libraries, and other approved buying agencies. Some states issue state master contracts and state-filed FCC Form 470's to cover products available through PEPPM. Further information is available at www.PEPPM.org.

beyond that information. That is, USAC has placed high reliance on manufacturer participants for submitting appropriate information for E-rate eligible products. USAC utilizes a review process for product submissions that is based on multiple independent reviews. Products that appear to be eligible from the information submitted, and for which sufficient information is provided, are posted to the database. In the case of product information that cannot be posted to the database, manufacturers are notified, and have the opportunity to correct and resubmit, or to appeal the determination.

The <u>public interface</u> for the Eligible Products Database provides a basic search capability that allows users to retrieve information based on selection criteria. Product records may be retrieved based on manufacturer, product name, or product type (router, file server, video equipment, etc.). In addition, a search can be conducted on a manufacturer's identifying number, which is typically the product's standardized SKU (Stock Keeping Unit).

The Schools and Libraries Division of USAC maintains an <u>internal interface</u> that is used in making determinations of eligibility for funding requests. Because many products are eligible for funding only if used in certain ways, this internal system includes information about the conditions for eligibility. USAC is pursuing an enhancement that would make this information available to the public, so that they are better informed about eligibility conditions. This enhancement is described more fully in the upcoming section of this document "Improvements Anticipated for Fund Year 2006."

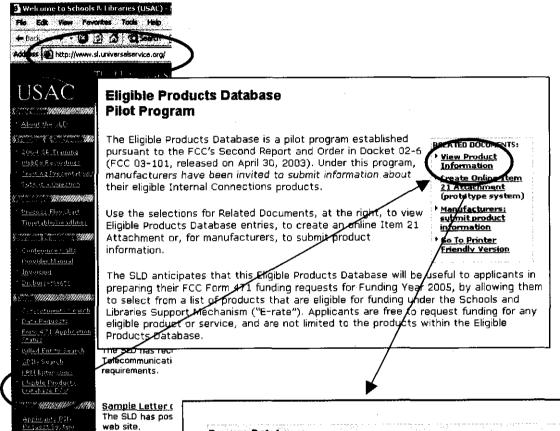
USAC has also made available a prototype <u>Item 21 Attachment</u> system that can draw from the Eligible Products Database. The prototype Item 21 Attachment system, even though an early implementation, opens possibilities for substantial quality improvements in E-rate processes that are described more fully later in this report.

⁶ While full details are excluded from this report, every product submission undergoes an automated systems review and additional review by USAC staff.

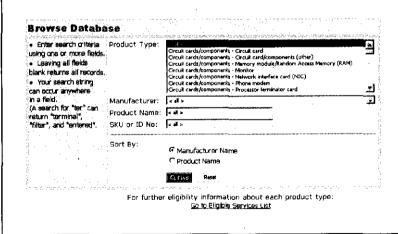
⁷ For example, wireless data networking components in an internal connections funding request are generally eligible when used in an applicant's local area network, but are not eligible if used to cross a public right of way in order to provide a Wide Area Network system.

3. Use of the Public Interface

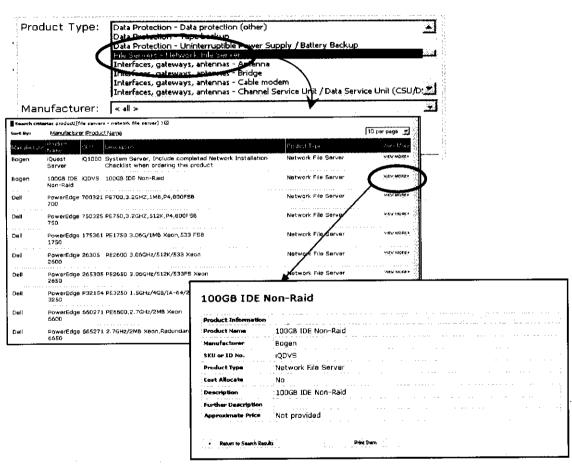
Public access to the Eligible Products Database is provided by a link on USAC's Schools and Libraries Division web site.



Users can search for products by "product type," manufacturer, product name, or SKU. When products are returned based on the criteria selected, users can review the list of these products, and get further information about any of them.



"Product type" is a term that relates to a listing in the FCC's Eligible Services List. FCC eligibility requirements call for consistent treatment for like products, within the conditions for funding as indicated in this List. Using the same categorizations as the Eligible Services List helps ensure that the public has useful information about eligibility requirements, and that products with the same functionality are treated uniformly.



The end result is that users of the database can have high reliance that manufacturers' product information contained in the Eligible Products Database describes products that are eligible for E-rate funding when used for eligible purposes.⁹

⁸ The FCC's Eligible Services List provides information about the products and services that are eligible for E-rate funding. The List includes general eligibility information, such as the eligibility conditions for "routers," whereas the Eligible Products Database provides information about specific products, such as "Acme Model AB123 router." The FCC's Eligible Services List is available on the USAC website, at http://www.sl.universalservice.org/reference/eligible.asp.

⁹ Products are eligible or not eligible for funding, depending on how they are used and whether they are installed at eligible locations. Existence of a product record in the Eligible Products Database is not a guarantee that the product will be eligible for all uses.

4. The Prototype Item 21 Attachment System

The prototype Item 21 Attachment system is an additional interface that is available to the applicant community. It is related to the Eligible Products

Database, but has features that expand substantially beyond the EPD alone.

An Item 21 Attachment is a key component of an applicant's funding request. It provides details about the specific products and services for which funding is requested, and is used by USAC to evaluate whether these products and services meet FCC requirements for E-rate eligibility.

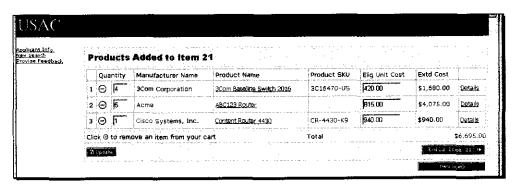
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Item 21 Attachments are described on USAC's web site as having three sections:

- A narrative description that describes the funding request in general;
- Line item detail;
- Additional information that assists the SLD in evaluating eligibility.

The current online implementation, as a basic prototype, is limited in two major respects. The system does not have a "save and return" feature. This means that the entire Item 21 Attachment must be built in a single session. Also, no online filing option is currently available—though the Item 21 Attachment is created online, it must be printed out by the applicant and then separately submitted.

USAC constructed the initial Item 21 Attachment prototype with an understanding that these initial limitations were significant. However, the value of gaining initial information during the Fund Year 2005 cycle, so that further improvements could be optimized, argued in favor of at least a limited implementation for 2005. USAC proposes to address the above limitations and provide an improved Item 21 Attachment system for the 2006 Funding Year.



The prototype system allows line item detail to be created either from entries contained in the Eligible Products Database or manually entered.

USAC's review of funding requests is significantly improved when the Item 21 Attachments are complete, because this reduces the need for further applicant contact. A useful feature of the online prototype is a system that prompts applicants for information that is helpful to include as part of the Item 21 Attachment.

If an applicant, for example, indicates that the components they have selected include remote access capability, and an ability to be configured as a Virtual Private Network (features that have eligibility limitations under the E-rate

Baye	ld Item 21 Altachment	
ekqi	ale Products Datebase plat program.	
	Cortifications and Additional Information	
	You may optionally provide additional information as part of your Item 23 Attackment.	
	Funding requests with the features indicated below generally require additional information can assist SLD review of your funding request by mohiding appropriate additional information A Lephanical	to be submitted. You on in your Item 21
	Use the checkboxes to indicate features included with your funding request. If you are un the checkboxes to display additional information.	sure, you also may use
	F Remote access encounced	
	I' Equipment that can establish a virtual Prinate McEwork (VPM)	
	File servers	Approximately and the second
	F Extensive file storage F Weelers access points	
	Cother (provide further information in Additional Information box)	
	Tito Certifications Required	
	For flammer information, see the appendix and other information in the document (<u>less 21 M</u> available in the Reference area of the SED wobsite.	technology for Form 673.
	You also may provide additional information in the text tool believ, or you may submit furth separate pages. Certifications submit ted to the SLD are to include signature, name, date.	and title.
	Additional information	
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program), then the applicant is provided the opportunity to provide a certification statement that the components will only be used in an eligible way, or to provide cost allocation information to remove the costs for ineligible features.

At this time, the prompting system provides all users the same reminder information about common eligibility requirements. USAC foresees the ability to

upgrade this capability so that reminder information is keyed to the specific products and services indicated on the applicant's Item 21 Attachment.

An Item 21 Attachment completed with the prototype system includes the narrative overview, the line item detail (including information about where the components are located), and additional information and certification statements that will allow USAC staff to efficiently process the funding request.

The example Item 21 Attachment shown on the next page consists of two product line items. The first line item was drawn from the Eligible Products Database, while the second line item was manually entered. In order to assist SLD review, a footnote on the Item 21 Attachment identifies manually entered line items.

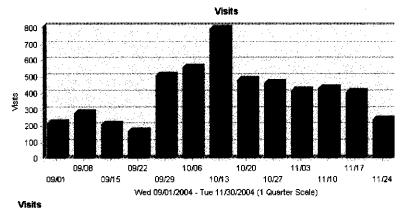
Example Item 21 Attachment created with online system

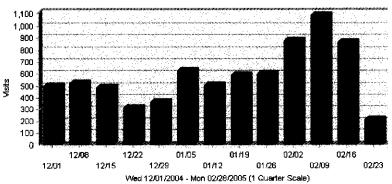
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AAP - NAJANJANJA	Applicant details		
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	Billed Entity Humber:	123456	
	Form 471 Application Number	456789	
	Funding Request Humber Service Provider	1239876	
	·	Acme Integrators, LLC	
	Applicant's Form Identifier Narrative description of	RH-7	
	this funding request Product List	Routers and switches for high school	ol, middle schools and district office.
	ProSwitch FixPort (Unmanaged)		Quantity: 3 Extended Price: \$1,260.00
	Hamifacturer Hame	Waters Network Systems	
	Product SKU	ProSwitch-16F	
			the collection of the control of the
	Product Description Product Type	16-port unmanaged 10/100Mbps swi Network switch	ten with one noer uplink siot.
	Further Information	inclinate difficult	
	Location Details	Ford Middle School, Pontiac Middle S	chool Dodge High School
	Elig Unit Cost	\$420.00	and, burge ingli builde
•	4ABC-12 Router*	¥120.00	Quantity: 4 Extended Price: \$3,260,00
	Manufacturer Hems	Acme Products	
	Product SKU		
	Product Description	4-port network router with built-in C	SU/DSU
	Product Type		24,200
	Purther Information		
	Location Details	Ford MS, Pontiac MS, Dodge HS, Dist	trict Office
	Elig Unit Cost	\$815.00	
	Total:		\$4,520.60
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5. Current Use of the Eligible Products Database

The applicant community is beginning to use the Eligible Products Database. USAC has compiled statistics for two three-month periods, September through November 2004 and December 2004 through February 2005.

During the first threemonth period tracked, there were on average 57 visits per day, with almost 800 visits to the site for the week of October 13, 2004.





During the December through February period, there were on average 83 visits per day, with almost 1,100 visits to the site for the week of February 9, 2005. The Form 471 filing window for Funding Year 2005 was open from December 14, 2004 to February 18, 2005

The prototype Item 21 Attachment system was introduced more recently than the core Eligible Products Database interface. Therefore use of the Item 21 Attachment prototype has been more limited. A counter system has been developed that tracks the actual completion of the process and

creation of an Item 21 Attachment ready for printing. From February 17, when the counter was implemented, through April 15, the counter registered 173 completions. Eliminating duplications for the same Funding Request, Item 21 Attachments were created for 100 unique FRNs.

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6 Z 8 9 10 13 14 15 16 17 20 21 22 23 24 27 28 1 2 2 3

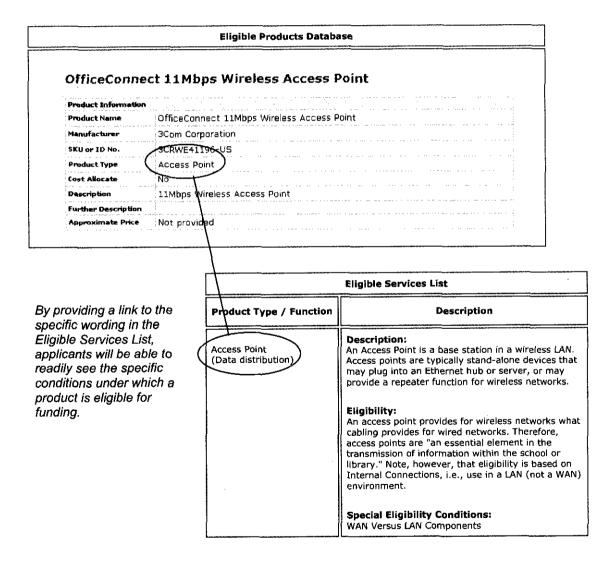
BEN	FRN	IPAddress	DateStamp
4727	1309544	68.235.22.210	02/18/2005
7530	1293248	67.154.72.1	02/18/2005
4727	1309544	68.235.22.210	02/10/2005
4727	1309544	68.235.22.210	02/18/2005
4727	1309544	60.235.22.210	02/18/2005
4727	1309544	68.235.22.210	02/18/2005
132363	1339116	207.165.35.65	02/18/2005
139225	1339426	205.152.138.34	02/18/2005
139225	1339426	205.152.138.34	02/18/2005
3449	1340251	206.103.158.46	02/18/2005
126678	1032681	129.71.215.161	02/18/2005
140773	1345275	65.69.27.31	02/18/2005
140773	1345275	65.69.27.31	02/18/2005
140773	1345275	65.69.27.31	02/18/2005
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129479	1350808	4.159.71.122	02/18/2005
129479	1350808	4.159.71.122	02/18/2005

6. Improvements Anticipated for Fund Year 2006

USAC proposes to continue its system development work in order to further enhance the Eligible Products Database. Changes to the interface will provide a more straightforward system, improved ease of use and additional features.

Current plans anticipate improvements in the following areas:

 The Eligible Products Database information will be more closely tied to information in the Eligible Services List, providing applicants with a better understanding of the conditions under which an entry is eligible for funding.



The partnership with participating manufacturers is being expanded.
 Manufacturers are being asked to provide additional information about the E-rate eligibility of their products.

As part of the	
enhancements	T Remote access equipment
underway in 2005,	Fequipment that can establish a Virtual Private Network (VPN)
manufacturers are	File servers
being asked to	F Extensive file storage
submit "checkbox"	Mireless access points

information that identifies any key product characteristics that raise resolvable eligibility issues. For example, some networking components provide a capability for users to dialin and remotely access network resources from ineligible locations. When a funding request is received for components that could be used in this way, USAC reaches out to determine if the applicant can provide a truthful certification that the products will be used to provide access only to eligible locations.

If the Eligible Products Database identifies products that contain this functionality, and USAC's implementation provides appropriate information to applicants about eligibility conditions, then applicants can submit required information to USAC as part of their funding requests rather than separately. By seeing eligibility details in a clearer light, USAC constituents will benefit.

 The USAC review process is being enhanced by utilizing a "concurrence model."

As originally implemented, USAC review entailed a strict yes-or-no determination whether a manufacturer's product submission could be posted to the database. USAC reviewers make no changes to the data submitted. This initial process is now being refined so that USAC senior reviewers will be able to reach out to manufacturers with questions or suggestions about their product information. If an authorized manufacturer representative concurs, USAC personnel will be able to make direct changes to the database information. This revised approach maintains the model of manufacturer-submitted information, but has potential to speed up the review and posting process and decrease rejections of manufacturer submissions for correctable problems.

 The automated aspects of the online Item 21 Attachment would be improved, to allow actual online submission of the Attachment, comparable to what is now accomplished with the online FCC Form 471 process.

Applicants would be able to create their Item 21 Attachment in stages by saving their work and returning at a later time to finalize. They would be able submit their Item 21 Attachment online. This latter enhancement would set the stage for powerful additional features anticipated in the longer term. For the first time, the Item 21 Attachment information will be saved as computer data rather than as an electronic image. If the information in Item 21 Attachments were provided as computer data, USAC would be able to track details relevant to individual applicants, and would be able to compile statistics that describe the overall use of Erate funds for specific technologies, products, and services. Even more powerful uses of this feature are described in the section of this document titled "Long Term Objectives for the Eligible Products Database."

¹⁰ An electronic image can be viewed, but numbers or words within that image cannot be readily machine-analyzed. In contrast, computer data can be directly compiled or compared. The distinction is similar to a table of information received as a fax and the same table of information received as a spreadsheet attachment to an e-mail message. The information in the fax is not directly usable by a computer, while the information in the spreadsheet is. Current Item 21 Attachments are provided to USAC without a standardized format, and are saved only as an electronic image file. Thus they are not able to be directly analyzed with computer processes.

7. Highlight of Decision Making Factors

In directing USAC to establish a pilot program, the FCC recognized that the implementation should proceed in stages. USAC was directed to report back to the Commission with its results. This section highlights some of the factors USAC has considered as the pilot project has developed.

Eligible Products Database is limited to Internal Connections. USAC has limited the pilot Eligible Products Database to Internal Connections, as directed by the Commission. When the associated Item 21 Attachment system is used for an Internal Connections funding request, it may contain several line items, some of which are represented in the Eligible Products Database and some not contained there. This is consistent with the Commission's direction that "applicants may also seek support for internal connections equipment that is not on this list."

In the same way, there is no barrier against using the Item 21 Attachment system for funding requests other than Internal Connections. That is, while the Eligible Products Database is currently limited to Internal Connections only, the online Item 21 Attachment system is not. Item 21 Attachments for other funding categories would not be linked to the (Internal Connections-only) Eligible Products Database, but the line item detail in such Item 21 Attachments would still have the advantages of being saved as computer data rather than only as an electronic image.

For the 2004 Funding Year, 29% of all funding requests were for Internal Connections, while 56% were for telecommunications services and 15% were for Internet access. Thus, allowing applicants to submit all Item 21 Attachments using the online system provides the maximum ability for applicants to submit directly usable computer data to USAC.

Ability of Eligible Products Database to operate as a safe harbor. The FCC directed that the Eligible Products Database "should operate as a safe harbor, rather than a complete list of all eligible items." The concept of a safe harbor raises a question whether the existence of a product listing in the Eligible Products Database provides a guarantee that a particular product is eligible. That is, if a product that is not eligible for E-rate funding were erroneously listed in the database, and applicants base their funding requests on this listing, is such a listing sufficient to assure successful funding? USAC interprets the FCC's use of the term "safe harbor" as applying in a limited context. As with other areas of the E-rate program, actual FCC policies from rules and Orders are taken to be senior to an erroneous individual determination, if any.

During the past year, review of manufacturer product submissions has been undertaken with no addition to USAC staffing. Though the process utilized appears to be achieving sufficient quality, the potential is real that an ineligible product could be submitted by a manufacturer and could pass USAC review, and

thus could be incorrectly posted to the database. USAC strives for and generally achieves high accuracy in its processes, but the existence of potential errors must be recognized.

Automatic eligibility of database entries. In addition to the discussion above about "safe harbor," FCC guidance indicates that "all equipment and services will be automatically eligible for discounts, provided the use is eligible and other funding requirements are satisfied." In administering the E-rate program, USAC has found that the conditional eligibility of many products is one of the complicating factors that creates confusion for some applicants. The same physical product may be eligible for funding, or not eligible for funding, depending on how it is used. For example, the same physical computer file server may be used as a web server (generally eligible) or for storage of end user files (generally not eligible). The Eligible Services List—available on the USAC web site at http://www.sl.universalservice.org/reference/eligible.asp—does not so much indicate what product and service categories are eligible as it indicates the conditions that must be met for a product or service to be eligible. Consequently. the product listings in the Eligible Products Database are not "automatically eligible for discounts" unless "the use is eligible" and "other funding requirements are satisfied."

Under this current model of conditional eligibility, a pre-approval that provides complete certainty of E-rate eligibility is not available. Restated, the complicating details of the various product and service eligibility conditions are not simplified by the Eligible Products Database, although the EPD provides potential for greater understanding of those eligibility conditions.

USAC undertakes outreach efforts to educate applicants and service providers regarding the conditional eligibility details of the E-rate program as it is presently constituted. Yet experience indicates that the conditional nature of product eligibility and the complexity of some eligibility requirements can be misunderstood.

The above information is presented to assist the FCC in any further deliberations relating to the Eligible Products Database. In addition, a set of related issues facing USAC's ongoing development of the EPD is provided in the balance of this section. This remaining discussion is organized into the following four challenges:

- Manufacturer resources
- USAC resources
- Data reliability
- Applicant acceptance

Manufacturer resources. Manufacturer data submissions are the foundation of the Eligible Products Database. Twenty-nine manufacturers enrolled during the initial signup period, and this number has grown to 42 manufacturer companies in the following months. Significantly, participating manufacturers have agreed to associate each of their submitted products with a "product type" that derives from the Eligible Services List. This has allowed USAC and applicants to better understand the specific conditions that surround the E-rate eligibility of the product. As indicated, manufacturers are now being asked to provide even further details regarding their products. "Checkboxes" are being added so that products can be better associated with some of the major eligibility conditions. In this way, applicants will have more complete information about the eligibility details of components in their funding requests. This checkbox information is planned to be as follows:

Cost Allocation. For products that contain a combination of eligible and significant ineligible uses, applicants must request funding only for the eligible portion. Products that require cost allocation between eligible and ineligible features are already identified in the Eligible Products Database. The additional checkboxes below will add to this existing information.

Remote access. For products capable of remote access, applicants are asked to submit a certification that the components will only be used to connect eligible locations.

<u>File servers.</u> For products used as file servers, applicants are asked to indicate the use(s) of the file server. As an example, the Eligible Services List indicates that file servers used for Dynamic Host Configuration Protocol (DHCP), Domain Name Services (DNS), E-mail, Firewall, or Proxy Services are eligible, but file servers used for Application Servers, Database Servers, and Archive Servers are not eligible. Applicants must cost allocate any ineligible uses.

<u>Virtual Private Networks.</u> For products capable of being used to establish a Virtual Private Network (VPN), applicants are asked to indicate that this ineligible feature will not be used, or to cost allocate the ineligible VPN capability.

Extensive file storage. For products that provide extensive file storage, applicants are asked to indicate that the storage will only be used for certain eligible purposes, or must cost allocate any storage capacity that is to be used for purposes that are not eligible. Eligible uses of storage include storage for eligible network operating systems and e-mail. Ineligible uses of storage include storage for application software and for end-user files other than e-mail files.

<u>Wireless components.</u> For wireless data networking products, applicants are asked to indicate whether or not the wireless components will be configured to enable connectivity across a public right of way, since FCC requirements do not allow Internal Connections funding for Wide Area Networks.

¹¹ A list of manufacturers participating in the Eligible Products Database is provided in Appendix 2.

A forum with participating manufacturers was conducted in early 2005, in order to review current status and consider potential improvements. Based on these preliminary discussions, USAC anticipates that manufacturers will continue the partnership that has been established, and will continue active participation even with this larger data submission requirement.

<u>USAC resources</u>. The approach used for the EPD during the pilot development was carefully crafted to maintain feasibility for initial creation of a large database and interrelated systems. Now that a baseline system has been successfully implemented, the next phase must balance improvements available against the resources required for those improvements.

USAC review of manufacturer data submissions has been designed for optimal efficiency, but could become substantially more resource intensive if there are significant additional product submissions. Current resources have proven adequate for data submissions at a rate of approximately five hundred per month, but additional resources will be required if the database grows at a significantly faster rate or, as indicated below, a more extensive review process is utilized.

<u>Data reliability.</u> USAC relies on manufacturers to provide an accurate and complete description of their products. USAC does not create any product information that is shown in the Eligible Products Database. Rather, USAC staff determines whether the information submitted appears to be a sufficiently detailed and accurate description of eligible equipment. If so, the product is posted to the database. If not, appropriate information is communicated to the manufacturer.¹²

Significantly, for most product submissions, no analysis of additional information beyond that submitted by the manufacturer is undertaken by USAC staff. Intensive review of each production submission through research of manufacturer web sites or product information has not been feasible due to the workload this would entail in comparison to the staff resources available.

Due to these limitations in the review process, one of the key concerns during implementation of the pilot program was whether USAC's review of submitted

¹² Particularly during the early months of the pilot program, many product submissions were not accepted by USAC review staff. As of April 2005, over 3,500 products were included in the Eligible Products Database. Over two thousand additional submissions had been received that USAC staff determined could not be posted to the database, either because information was not sufficiently complete or questions were raised about the eligibility of the product. In most of these cases, manufacturers re-submitted with more complete descriptions, and their products were then able to be included in the database.

products was sufficiently rigorous to ensure that products posted to the Eligible Products Database would be eligible.

Initial experience gained over the past several months indicates that the quality of information in the Eligible Products Database has been reliable. However, USAC intends to gather further information as the Eligible Products Database continues to expand.

USAC has encouraged members of the public to raise questions about any entries in the Eligible Products Database that appear to have suspect eligibility. No such submissions have yet been received. Follow-on Quality Assurance efforts indicate that the quality of the information in the Eligible Products Database is good. Nevertheless, USAC intends to consider on an ongoing basis whether a higher level of USAC review will be required to provide appropriate assurance that listings in the database are eligible when used for an eligible purpose.

Applicant acceptance. Tied closely to the issue of data reliability is the question of how significantly applicants will embrace and use the Eligible Products Database. Initial results, while favorable, are preliminary, and do not necessarily address acceptance by a majority of the E-rate public.

During initial system design, some applicants were vocal that they desired a system where there would be a guarantee that products listed in the database would be eligible. They desired an Eligible Products Database that would provide full assurance of eligibility, rather than only conditional eligibility.

As described above, existence of an entry in the database provides only high assurance, but not an absolute guarantee, that the product shown is E-rate eligible, and then only if installed and utilized in a way that is consistent with FCC policies. A database with entries that are guaranteed to be eligible does not appear possible as the E-rate program is presently constituted.

Initial use of the system has fully met expectations for an initial pilot program. Experience over the next year will be a key determinant in whether the advantages of an online listing of products will be sufficiently attractive for broad use.

8. Long Term Objectives for the Eligible Products Database

The improvements anticipated for use for Fund Year 2006 applications mesh with a long range plan that has the potential for dramatic improvements in the E-rate funding process. As indicated earlier, the Item 21 Attachment is presently saved as an image file, and such an approach means that the information contained in the Attachment is not retrievable for machine comparison with other information. Once Item 21 Attachments can be submitted as computer data, a next critical step will be to modify USAC's review processes to use the online Item 21 Attachment system.

Invoice reviews. Currently, USAC's review of E-rate invoices is resource intensive. No specific listing of products and services being invoiced is required on current FCC invoicing forms. USAC reviewers must often request additional documentation (e.g., a detailed copy of the bill with products and services listed), which slows the invoice review process. To ensure that the products and services for which USAC is being invoiced are the products and services for which funding was committed, invoice reviewers spend substantial time searching for and finding the computer image of an applicant's Item 21 Attachment. Reviewers must then determine if there have been any changes to this information (e.g., through a service substitution request), and determine whether the invoice should be paid based on a manual comparison of this information.

If the Item 21 Attachment data existed in a machine-readable format, and if machine-readable information about products and services were submitted with invoices, USAC could use an automated "line item matching" approach to compare invoices to the requested products and services on the Item 21 Attachment. Manual review would continue to be required in many cases, but the overall impact of line item matching could lead to a significant improvement in USAC's customer service by reducing necessary customer contact for required documentation. This approach would allow the applicant or service provider to submit product and service information sooner, thus reducing the time to process invoices.

Conceivably, the preliminary steps of an invoice pilot project implementation may be possible for Fund Year 2007 and beyond if the initial concept proves feasible.

Potential for Computerized Matching / More Effective Invoice Review

Item 21 Attachment							
3	Acme ABC123	Network router		@ \$920.00			
5	Acme XYZ987	12-port network sv	vitch	@ \$440.00			
1	Acme MNO537	E-mail server		@ \$2380.00			
10	Acme DFE847	Fiber optic patch c	able	@ 14.00)	
No Match Match Match							
	manual review `			•	Invoice		
process could be assisted by computerized line			3	Acme ABC123	Network router	@ \$920.00	
			5	Acme XYZ987	12-port network switch	@ \$440.00	
item	matching	*	3	Acme RBQ721	Video gateway	@ \$4460.00	

USAC sees the potential for significantly improved customer service through an automated matching system for its invoicing processes if applicants and service providers are willing to provide additional detail with invoice submissions. Yet the promise for these prototype systems is not limited only to invoicing. Review of funding requests and review of post-commitment processes such as appeals and service substitutions can also benefit.

Review of funding requests. As a production process for many thousands of funding requests, USAC's review efforts benefit from tools that improve efficiency. Such tools are in place, but further improvement is possible with full implementation of the Eligible Products Database and online Item 21 Attachment. By providing applicants with a system that gives improved assurance that certain products are eligible for E-rate funding, submissions to USAC become more straightforward to review. This is particularly true since the review process can also rely on the same products database, and hence provide more straightforward decisions for funding requests that consist of entries from that database. If automated review of products and services could save an average of five minutes per funding request, when multiplied over 100,000 funding requests, the savings would be over 1,000 person days. (This calculation is illustrative only because USAC has not gathered sufficient information at this time to determine specific savings.)

<u>Post-commitment processes.</u> After funding determinations are made, additional steps are sometimes required, such as processing of service substitution

requests (i.e., requests to modify the specific products and services originally approved) and review of appeals. These review processes depend on a precise knowledge of the commitment decisions previously made. However, there is currently no single source that maintains a complete list of the products and services for which funding has been authorized. By instituting a computerized record of the products and services on an Item 21 Attachment, a system can also be in place for tracking any changes from this original submission. (The two sets of data that represent the original request and the approved commitment are known generally as "original" and "current.") Thus, post-commitment processes such as service substitutions and appeals would have access to reliable information from a single easily-accessible tool, and would be able to keep this single resource updated for the benefit of any other post-commitment processes.

Because the overall effect of this system would be to improve efficiency and effectiveness, USAC's human resources could become more focused on cases where individualized attention is important. The overall potential is for better customer service through simpler and more accurate processes, and better oversight through enhanced review tools.

Management information. In addition to the above review benefits, the fully developed tools would, for the first time, provide a detailed understanding of the products and services being requested by applicants. Currently, USAC tracks the dollar amount for E-rate funding requests by major service category—telecommunications, Internet access, internal connections, and basic maintenance of internal connections. No systematic method is currently available for tracking with greater granularity. USAC anticipates that the Eligible Products Database and the online Item 21 Attachment systems could provide this additional detail for internal connections funding request. Future information would be able to show the breakdown in dollars committed for file servers, routers, cabling, telephone PBX's, and other internal connection components. Decision makers would have more complete information to help guide administrative and policy actions.

¹³ The image file of an Item 21 Attachment provides a listing of the products and services requested, but provides no information to indicate whether any reductions were made for ineligible features, or whether any pre-commitment or prior post commitment process has modified the list of products and services on the original Item 21 Attachment. Thus, detailed manual analysis of a funding request's history is currently required.

9. Conclusion

The initial deployment of the pilot program has been successful, however, substantial work over the coming year(s) will be required to achieve broadbased acceptance by the applicant community. Over the long term, potential exists for significant benefits, yet substantial investments must take place for this potential to be realized. For example, USAC's current E-rate invoicing process does not routinely require the same type of information as is required for the Item 21 Attachment. Thus, significant modification of the invoicing process would need to take place in order to align with information in the Eligible Products Database.

Additional issues, not yet identified but likely to be discovered as further work is underway, could pose further challenges.

USAC proposes to continue the enhancement of the Eligible Products Database and the online Item 21 Attachment system, consistent with the information contained in this report. Further progress requires the continued commitment from manufacturers, additional acceptance and use by applicants and the public, participation by service providers, and careful management of USAC resources that balances this important long term effort against ongoing operational priorities. A continuation of partnerships established with USAC constituent communities—applicants, manufacturers, and service providers—will be instrumental in identifying important issues and determining appropriate solutions.

The opportunity appears available for improvements in E-rate processes. Whether this potential can be realized will be tested and further explored over the coming months.

Appendix 1: Excerpts from FCC 2nd Report and Order

CC Docket 02-6, FCC 03-101 Adopted April 23, 2003, Released April 29, 2003

Paragraphs 31 through 37

- 31. <u>Computerized Eligible Service List</u> We conclude that it would be beneficial to develop a process that would simplify applicants' selection of eligible services. The Commission currently directs the Administrator to determine whether particular services fall within the eligibility criteria established under the 1996 Act and the Commission's rules and policies. The Administrator evaluates, in consultation with the Commission on an ongoing basis, particular services and products offered by service providers, and determines their eligibility. In order to provide applicants with general guidance, the Administrator makes available on its website a list of categories of service that are conditionally eligible or ineligible, although it does not identify specific eligible brands or items. Applicants or service providers may appeal the Administrator's decision that a given service is ineligible for discounts only after a requested discount for that service is denied.
- 32. In the Schools and Libraries NPRM, we specifically sought comment on whether to establish an online computerized list of actual products and services, whereby applicants could select a specific product or service as part of their FCC Form 471 application.⁵³ We suggested that under such a proposal, the number of instances in which applicants seek funding for ineligible services might decrease. We also suggested that such a process would considerably simplify the application review process. ⁵⁴ We sought comment on the desirability and feasibility of this approach. Specifically, we sought comment on how often such a list should be updated; how to ensure that such a list would not inadvertently limit access to products and services newly introduced to the marketplace; and how to obtain input on an ongoing basis regarding what specific products and services should be eligible.⁵⁵
- 33. After reviewing the record, we conclude that there is merit to creating an online computerized list system for internal connections. We decline, however, to mandate a similar computerized list system at this time for telecommunications services and Internet access.
- 34. In general, we agree with commenters that such a list would aid applicants to more clearly understand which items have already been approved by USAC as eligible.⁵⁶ Use of such a list should facilitate expedited processing of many funding requests, decrease rejection of requests for ineligibility, and decrease the chances that any ineligible request would be

⁵² See SLD web site, Eligible Services List (October 17, 2001) http://www.sl.universalservice.org/reference/eligible.asp.

⁵³ See FCC Form 471.

⁵⁴ Schools and Libraries NPRM, 17 FCC Rcd at 1921, para. 14.

⁵⁵ Id

⁵⁶ See Colorado DOE Comments at 2; Rural Schools Community and Trust Comments at 3.

accidentally awarded discounts. The use of this list by applicants, therefore, should reduce the burden on applicants in completing their applications. In addition, use of such a list would streamline review by the Administrator, allowing it to focus on more complex matters arising in the application process. Finally, by helping to avoid support of ineligible services, an online computerized list would further the Commission's goal of preventing fraud and abuse.

- 35. At the same time, we are persuaded by the Administrator's concerns and those of certain commenters that such a list should be developed with care. For example, the list should be careful not to favor certain vendors over others. Thus, we conclude that the development of such a list should proceed in stages. The Administrator should first test the use of such a list on a limited portion of the eligible services and products list. Therefore, we direct USAC, in conjunction with the Wireline Competition Bureau (Bureau), to develop and test as a pilot program an online list for internal connections equipment. We believe that such a pilot program would assist in further developing a record regarding how such a list could, in practice, provide clearer guidance about the potential eligibility of telecommunications and Internet access services than the current website posting.
- 36. We direct the Administrator to design a pilot program in consultation with the Bureau that is in keeping with the following principles: (1) the pilot system should continue to allow flexibility of choice of products by applicants; (2) this list should operate as a safe harbor, rather than a complete list of all eligible items; (3) all equipment and services listed will be automatically eligible for discounts provided the use is eligible and other funding requirements are satisfied; (4) there should be a procedure to have new products added to the list; (5) applicants and service providers may use the existing appeals procedures to appeal decisions by the Administrator rejecting the addition of specific items on the list; (6) applicants may also seek support for internal connections equipment that is not on this list; (7) such requests will be evaluated consistent with the Administrator's existing practice of ensuring that the equipment and proposed use are consistent with educational purposes. ⁵⁷
- 37. We expect that the Administrator will be able to implement the pilot program no later than Funding Year 2005. The Administrator will timely report to the Commission about the effectiveness of the program during and after successful implementation. USAC's report should include information that details the effect of the list on the administrative review process, including the cost, and the number of applicants making use of such a list. We will evaluate this data and take it into consideration when evaluating whether and how to proceed to make this list accessible from the online FCC Form 471, and whether and how to incorporate telecommunications and Internet access services into such a list. In addition, in the accompanying Further Notice we seek further comment on the feasibility of an online eligible services brand name list for telecommunications services and Internet access.⁵⁸

⁵⁷ See generally SLD web site, Eligible Services List (October 17, 2001) http://www.sl.universalservice.org/reference/eligible.asp.

⁵⁸ See infra para. 101.

Appendix 2: Manufacturer Participants in the Eligible Products Database

As of April 30, 2005

3Com Corporation

ACS, Inc.

Aethra, Inc.

Alcatel Internetworking Inc.

Allied Telesyn, Inc.

Apple Computer, Inc.

Avaya, Inc

Bogen Communications, Inc.

Cisco Systems, Inc.

Dell Marketing L.P.

Detel Wireless

Enterasys Networks, Inc.

Foundry Networks, Incorporated

Gateway Companies Inc

Hewlett Packard Company

Howard Computers

International Business Machines Corporation

Juniper Networks (US), Inc.

Lightspeed Systems Corporation

Marconi Communications, Inc.

MiLAN Technology

Mitel Networks Solutions Inc

New England Systems and Software Inc.

Nortel Networks

Optibase, Inc.

Optical Cable Corporation

Polycom Corporation

Quatro Systems, Inc.

Radvision

Rauland-Borg Corporation

SAFARI Technologies, Inc.

ServGate Technologies, Inc.

Siemens Enterprise Networks LLC

Sprint Communications Co. L.P.

StarBak Communications, Inc.

Systems and Solutions, Inc.

Tandberg, Inc.

Toshiba America Information Systems

TrippLite

VBrick Systems, Inc.

VTEL Products Corporation

Waters Network Systems, LLC